

## **REMARKS**

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested. Upon entry of this amendment, claim 39 is amended, leaving claims 39-64, 78 and 79 pending with claim 39 being independent. No new matter has been added.

### ***Rejections Under 35 U.S.C. §102(b)***

Claims 39-42, 44-47, 49, 55 and 58 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Jarrett et al. (U.S. 4,737,247).

Applicants submit that the claims as now pending are allowable over the cited prior art. Specifically, amended independent claim 39 recites a method for electrolytic production of aluminium metal from an electrolyte comprising aluminium oxide, the method comprising controlling and maintaining the temperature of an electronic active surface of electrodes at a level different from the level of the surrounding electrolyte by active or passive cooling and/or active or passive heating.

Thus, the method recited in claim 39 of the present invention is distinct from the process of protecting a positioning means of non-conductive material from corrosive attack of the electrolyte.

The cited prior art fails to disclose or render obvious such a method. In particular, the Examiner states that Jarrett discloses controlling and maintaining the temperature of the electrodes at a level different from the level of the surrounding electrolyte by active or passive cooling and/or active or passive heating, such as by having heat pipes to allow a heat exchange in the system, with at least one flow channel connected to the anode stem, the cooling medium in the heat pipes may be gas or liquid sodium or potassium.

Applicants respectfully disagree and submit that in accordance to McGraw-Hill Encyclopedia of Science & Technology, 8th Edition, GEO-HYS, pp. 393, a heat pipe is a device for transferring heat efficiently between two locations by using the evaporation and condensation of a fluid contained therein. A copy of this reference page is attached herewith.

Further, Jarret discloses, in column 3, lines 3-18, that the heat pipe transfers heat from the spacer between an anode and cathode immersed in the electrolyte and to the surroundings of the cell. Applicants submit that the heat pipe in Jarret is not a heating element that can transport net

heat to the spacer and the electrodes.

Therefore, both generally and specifically in the Jarret reference, heat pipes merely transport heat away from a hot area where a spacer is located to a colder area. That is, one of ordinary skill in the art would clearly understand that the Jarret device is limited to just cooling.

Thus, Jarret does not disclose the transport of heat to the electrodes, as required by claim 39 of the present application. Moreover, one of ordinary skill in the art would understand Jarret as teaching away from transporting heat to the electrodes, since Jarret only discloses that the heat pipe transports heat away from the hot area where the spacer is located to a colder area.

Therefore, Applicants submit that Jarret neither discloses nor renders obvious controlling and maintaining the electronic active surface of cathodes at a temperature level above that of the electrolyte, as required by independent claim 39.

Further, the cited prior art fails to disclose that the temperature in the anodes can be different from the temperature of the cathodes. That is, Applicants submit that even if the spacer in Jarret is cooled sufficiently, and the temperature in both the anode and the cathode become very close to the temperature of the spacer, the cooling parts of the electrodes, particularly the cathode, would likely accelerate sludge/deposit formation onto the electronic active surfaces, which will have a negative effect on the electrolytic process. Additionally, Jarret does not disclose the ability to heat one type of electrodes and cool another type.

Therefore, the cooling arrangement in Jarret must necessarily operate on the spacer only and not on the electrodes. Moreover, there is no reasoning in the prior art to modify Jarret, such that it would have rendered independent claim 39 obvious.

For at least the reasons set forth above, Applicants submit that independent claim 39 and its dependent claims are allowable over the cited prior art.

### ***Rejections Under 35 U.S.C. §103(a)***

Claims 48, 50-54, 57, 59, 60, 62-64, 78 and 79 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Jarrett, as applied to claim 46 above. Claims 43, 56 and 61 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Jarrett, as applied to claim 46 above and further in view of Brown (U.S. 4,678,578).

Applicants submit that since each of these claims is dependent from claim 1 and since Brown fails to overcome the deficiencies of Jarrett, each of these claims is allowable for the reasons set forth above.

***Conclusion***

In view of the foregoing amendments and remarks, all of the claims now pending in this application are believed to be in condition for allowance. Reconsideration and favorable action are respectfully solicited.

Should the Examiner believe there are any remaining issues that must be resolved before this application can be allowed, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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